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MACMILLAN SOBANSKI & TODD, LLC  
ONE MARITIME PLAZA FOURTH FLOOR  
720 WATER STREET  
TOLEDO, OH 43604-1619

EXAMINER	
HORTON, YVONNE MICHELE	
ART UNIT	PAPER NUMBER

3635

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Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No. 09/744,375	Applicant(s) THOMAS GILDROY SHAW ET AL.
Examiner YVONNE M. HORTON	Art Unit 3635

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

1)  Responsive to communication(s) filed on Nov 20, 2002

2a)  This action is FINAL. 2b)  This action is non-final.

3)  Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

4)  Claim(s) 1-19, 21-33, 35, and 38 is/are pending in the application.

4a) Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5)  Claim(s) 28 and 33 is/are allowed.

6)  Claim(s) 1-10, 16-19, 21-27, 29-32, 35, and 38 is/are rejected.

7)  Claim(s) 11-15 is/are objected to.

8)  Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

9)  The specification is objected to by the Examiner.

10)  The drawing(s) filed on \_\_\_\_\_ is/are a)  accepted or b)  objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)  The proposed drawing correction filed on \_\_\_\_\_ is: a)  approved b)  disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.

12)  The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

13)  Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)  All b)  Some\* c)  None of:  
1.  Certified copies of the priority documents have been received.  
2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3.  Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\*See the attached detailed Office action for a list of the certified copies not received.

14)  Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).  
a)  The translation of the foreign language provisional application has been received.

15)  Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

1)  Notice of References Cited (PTO-892) 4)  Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_

2)  Notice of Draftsperson's Patent Drawing Review (PTO-948) 5)  Notice of Informal Patent Application (PTO-152)

3)  Information Disclosure Statement(s) (PTO-1449) Paper No(s). \_\_\_\_\_ 6)  Other: \_\_\_\_\_

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## **DETAILED ACTION**

### ***Withdrawal of Allowable Subject Matter***

1. The indicated allowableness of claim 32 is withdrawn in view of a more careful review the reference(s) to HOUNSEL. Rejections based on the newly cited reference(s) follow.

### ***Claim Rejections - 35 USC § 103***

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 1,8-10,16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent #5,759,663 to HOUNSEL in view of US Patent #5,438,813 to WADE. HOUNSEL discloses a furnace lining including an insulating material (12), column 5, line 46, having a hot face (16) and a cold face (18). The insulation material (12) includes an embedded member (44) and a protective element (26) at least partially covering the hot face (16) secured thereto by a securing means (40) and a threaded stud, column 6, line 57-62, that cooperates with the embedded member (44). HOUNSEL discloses the basic claimed furnace lining except for explicitly detailing that the lining is positioned against a furnace. Although HOUNSEL does not specifically disclose the use of a furnace, *per se*', he does detail that the cold face (18) is positioned adjacent items having high temperature environment. WADE teaches that it is known in the art to position the cold face of an insulating lining (15) adjacent a furnace wall (13). Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to position the insulating lining (12) of HOUNSEL adjacent the furnace (13) of WADE in order to properly insulate the furnace while maintaining a steady temperature within

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the furnace. In reference to claims 8 and 9, the protective member, once hardened, is a plate member consisting of a ceramic material, column 8, lines 40-62. Regarding claim 10, the furnace lining (12) of HOUNSEL includes a plurality of insulating blocks (10), column 2, line 46, made from folded ceramic insulated material (12), column 5, lines 44-50. Again HOUNSEL does not specifically disclose positioning his insulating block adjacent a furnace. However, WADE teaches that it is known in the art to position the cold face of an insulating lining (15) adjacent a furnace wall (13). Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to position the insulating lining (12) of HOUNSEL adjacent the furnace (13) of WADE in order to properly insulate the furnace while maintaining a steady temperature within the furnace. In reference to claim 16, the protective elements (26) includes a plurality of layers bonded together, column 7, lines 37-39.

4. In regards to claims 2-4,6,7,18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent #5,759,663 to HOUNSEL in view of US Patent #5,438,813 to WADE, as applied to claim 1, and further in view of EP 0695923; and claims 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent #5,759,663 to HOUNSEL in view of US Patent #5,438,813 to WADE in view of EP 0695923. As noted above, HOUNSEL discloses a securing means which is a threaded stud, column 6, lines 57-62, that inherently includes a shank and a head. However, HOUNSEL, as modified by WADE above, discloses the basic claimed furnace lining except for explicitly detailing that the threaded stud member has a head. Threaded studs having heads are old and very well known in the art. EP 0695923 teaches that it is known in the art to use threaded stud member (6) having a head (6a). Since

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HOUNSEL, as modified by WADE, details the use of a threaded member for cooperation with a embedded member (44) for securing the protective element (26) to the furnace lining (12), it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the headed/threaded stud member of EP 0695923 to secure the protective member of HOUNSEL, as modified by WADE in order to ensure a secure attachment of the protective member to the lining. In further regards to claim 19, HOUNSEL, column 6, lines 57-62, clearly details that the threaded member passes through the protective member (26) and engages the embedded member (44).

5. Claims 21,24-27,29-32,35 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent #5,759,663 to HOUNSEL in view of US Patent #5,438,813 to WADE. In reference to claims 21,31,32 and 35, the structure of HOUNSEL inherently defines a method of lining a furnace including the steps of attaching an insulation material (12) having a hot face (16) and a cold face (18); embedding a member (44); providing a protective member (26); and securing the protective element (26) by attaching a securing means (40) and a threaded stud that cooperates with the embedded member (44) such that the protective member (26) is retained between a portion of the securing means (40) and the threaded strut. HOUNSEL discloses the basic claimed method except for explicitly detailing that the lining is positioned against a furnace. Although HOUNSEL does not specifically disclose the use of a furnace, per se', he does detail that the cold face (18) is positioned adjacent items having high temperature environment. WADE teaches that it is known in the art to position the cold face of an insulating lining (15) adjacent a furnace wall (13). Thus, it would have been obvious to one having

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ordinary skill in the art at the time the invention was made to position the insulating lining (12) of HOUNSEL adjacent the furnace (13) of WADE in order to properly insulate the furnace while maintaining a steady temperature within the furnace. In reference to claim 24, the shank (unlabeled) of the threaded strut is inherently inserted through a hole (unlabeled) in the embedded member (44), column 6, lines 57-62. Regarding claim 25, the shank (unlabeled) engages a securing means (40), column 6, lines 57-62. In reference to claim 26, the embedded member (44) is embedded by forcing, column 8, lines 1-3. HOUNSEL does not disclose rotating; however, it is inherent that some sort of rotating is needed to force the embedded member (44) through all of the layers of insulation (12). Regarding claim 27, the insulation material (12) is a plurality of individual modules (10) folded to have a "block" configuration and are disposed to a high temperature device. Again, HOUNSEL discloses the basic claimed method except for explicitly detailing that the lining is positioned against a furnace. Although HOUNSEL does not specifically disclose the use of a furnace, *per se'*, he does; however, detail that the cold face (18) is positioned adjacent items having high temperature environment. WADE teaches that it is known in the art to position the cold face of an insulating lining (15) adjacent a furnace wall (13). Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to position the insulating lining (12) of HOUNSEL adjacent the furnace (13) of WADE in order to properly insulate the furnace while maintaining a steady temperature within the furnace. In reference to claims 29 and 30, the shank (unlabeled) of the threaded member of HOUNSEL, column 6, lines 57-62 is rotated by using the shank of the threaded strut as the tool. However, wade teaches that it is known in the art to use an engaging a

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tool (59) which is subsequently removed from the insulation (22). Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the method of HOUNSEL with the use of the tool of WADE in order to advance installation and securement of the embedded member and securing means. Regarding claim 38, the protective element (26) of HOUNSEL includes a plurality of layers, column 7, lines 37-39, bonded or not bonded.

6. Claims 22 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent #5,759,663 to HOUNSEL in view of US Patent #5,438,813 to WADE, as applied to claim 21 above, and further in view of EP 0695923. HOUNSEL, as modified by WADE above, discloses the basic claimed method except for explicitly detailing that the threaded stud member has a head. Threaded studs having heads are old and very well known in the art. EP 0695923 teaches that it is known in the art to use threaded stud member (6) having a head (6a). Since HOUNSEL, as modified by WADE, details the use of a threaded member for cooperation with a embedded member (44) for securing the protective element (26) to the furnace lining (12), it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the headed/threaded stud member of EP 0695923 to secure the protective member of HOUNSEL, as modified by WADE in order to ensure a secure attachment of the protective member to the lining. Thus, it too would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the method of HOUNSEL, as modified by WADE, to include insertion of the shank through the protective element (26) such that the shank cooperates with the embedded member (44); wherein insertion inherently includes the step of

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rotating the threaded member so as to allow the threads of the threaded member to engage threads of the embedded member (44).

7. Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent #5,759,663 to HOUNSEL, as modified by US Patent #5,438,813 to WADE, as applied to claim 1 above and further in view of EP 0695923. As detailed above, HOUNSEL, as modified by WADE discloses the basic claimed lining except for the protective element being a plate and the material used to form the protective element. EP 0695923 teaches that is known in the art to form a furnace protective element in the form of a ceramic plate (5). Thus, it would have been obvious to one having ordinary skill in the art to provide the system of WADE with the ceramic protective plate member of EP 0695923 in order to provide the furnace with superior insulation characteristics.

*Allowable Subject Matter*

8. Claims 28 and 33 are allowed.

9. Claims 11-15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

10. The following is a statement of reasons for the indication of allowable subject matter: the prior art of record fails to teach the method of lining a furnace wherein an embedded member is first aligned with the folds of the insulation and then rotated to be inserted into the insulation.

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***Response to Arguments***

11. Applicant's arguments with respect to claims 1-38 have been considered but are moot in view of the new ground(s) of rejection.
12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yvonne M. Horton whose telephone number is (703) 308-1909.

  
Yvonne M. Horton  
Art Unit 3635  
February 4, 2003